

=> fil reg

FILE 'REGISTRY' ENTERED AT 16:22:12 ON 18 MAR 2008  
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STRUCTURE FILE UPDATES: 17 MAR 2008 HIGHEST RN 1008496-49-8  
DICTIONARY FILE UPDATES: 17 MAR 2008 HIGHEST RN 1008496-49-8

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 9, 2008.

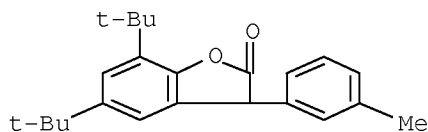
Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and  
predicted properties as well as tags indicating availability of  
experimental property data in the original document. For information  
on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stdoc/properties.html>

=> d ide can tot 17

L7 ANSWER 1 OF 10 REGISTRY COPYRIGHT 2008 ACS on STN  
RN 201815-03-4 REGISTRY  
ED Entered STN: 25 Feb 1998  
CN 2(3H)-Benzofuranone, 5,7-bis(1,1-dimethylethyl)-3-[2,3(or  
3,4)-dimethylphenyl]- (CA INDEX NAME)  
OTHER NAMES:  
CN HP 136  
CN Irganox HP 136  
MF C24 H30 O2  
CI IDS, COM  
SR CA  
LC STN Files: CA, CAPLUS, TOXCENTER, USPAT2, USPATFULL



D1-Me

122 REFERENCES IN FILE CA (1907 TO DATE)  
122 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 148:225728

REFERENCE 2: 148:204803

REFERENCE 3: 148:155630  
REFERENCE 4: 148:132234  
REFERENCE 5: 148:109260  
REFERENCE 6: 148:101375  
REFERENCE 7: 148:55942  
REFERENCE 8: 148:55933  
REFERENCE 9: 147:486942  
REFERENCE 10: 147:428153

L7 ANSWER 2 OF 10 REGISTRY COPYRIGHT 2008 ACS on STN

RN ~~169198-26-9~~ REGISTRY

ED Entered STN: 20 Oct 1995

CN 2(3H)-Benzofuranone, 5,7-bis(1,1-dimethylethyl)-3-(2,3-dimethylphenyl)-  
(CA INDEX NAME)

OTHER NAMES:

CN 5,7-Bis(tert-butyl)-3-(2,3-dimethylphenyl)-3H-benzofuran-2-one

CN 5,7-Di-tert-butyl-3-(2,3-dimethylphenyl)-2(3H)-benzofuranone

CN 5,7-Di-tert-butyl-3-(2,3-dimethylphenyl)-3H-benzofuran-2-one

MF C24 H30 O2

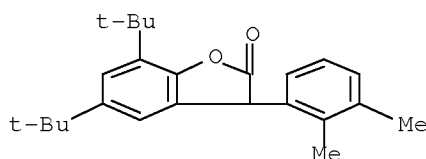
CI COM

SR CA

LC STN Files: CA, CAPLUS, CHEMLIST, USPAT2, USPATFULL

Other Sources: TSCA\*\*

(\*\*Enter CHEMLIST File for up-to-date regulatory information)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

36 REFERENCES IN FILE CA (1907 TO DATE)

36 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 148:178963  
REFERENCE 2: 147:511809  
REFERENCE 3: 147:511279  
REFERENCE 4: 147:437021  
REFERENCE 5: 146:82624  
REFERENCE 6: 145:104487

REFERENCE 7: 144:273841  
REFERENCE 8: 144:43169  
REFERENCE 9: 143:249083  
REFERENCE 10: 143:154613

L7 ANSWER 3 OF 10 REGISTRY COPYRIGHT 2008 ACS on STN

RN 164391-52-0 REGISTRY

ED Entered STN: 06 Jul 1995

CN 2(3H)-Benzofuranone, 5,7-bis(1,1-dimethylethyl)-3-(3,4-dimethylphenyl)-  
(CA INDEX NAME)

OTHER NAMES:

CN 5,7-Di-tert-butyl-3-(3,4-dimethylphenyl)-2(3H)-benzofuranone

CN 5,7-Di-tert-butyl-3-(3,4-dimethylphenyl)-3H-benzofuran-2-one

MF C24 H30 O2

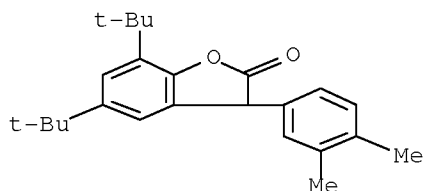
CI COM

SR CA

LC STN Files: CA, CAPLUS, CASREACT, CHEMLIST, TOXCENTER, USPAT2, USPATFULL

Other Sources: TSCA\*\*

(\*\*Enter CHEMLIST File for up-to-date regulatory information)



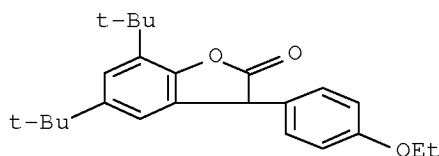
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REFERENCE 2: 148:155646  
REFERENCE 3: 148:109260  
REFERENCE 4: 147:551368  
REFERENCE 5: 147:511809  
REFERENCE 6: 147:511279  
REFERENCE 7: 147:487296  
REFERENCE 8: 147:487099  
REFERENCE 9: 147:437021  
REFERENCE 10: 147:144501

L7 ANSWER 4 OF 10 REGISTRY COPYRIGHT 2008 ACS on STN  
RN 155811-15-7 REGISTRY  
ED Entered STN: 17 Jun 1994  
CN 2(3H)-Benzofuranone, 5,7-bis(1,1-dimethylethyl)-3-(4-ethoxyphenyl)- (CA INDEX NAME)  
OTHER NAMES:  
CN 5,7-Di-tert-butyl-3-(4-ethoxyphenyl)benzofuran-2-one  
MF C24 H30 O3  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPAT2, USPATFULL

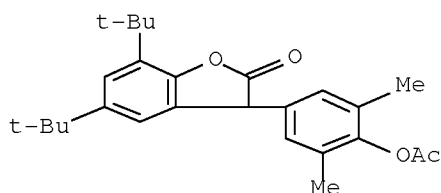


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9 REFERENCES IN FILE CA (1907 TO DATE)  
9 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 148:178963  
REFERENCE 2: 146:423000  
REFERENCE 3: 145:104487  
REFERENCE 4: 141:295685  
REFERENCE 5: 141:70644  
REFERENCE 6: 137:263786  
REFERENCE 7: 137:79675  
REFERENCE 8: 128:116258  
REFERENCE 9: 121:36914

L7 ANSWER 5 OF 10 REGISTRY COPYRIGHT 2008 ACS on STN  
RN 155810-89-2 REGISTRY  
ED Entered STN: 17 Jun 1994  
CN 2(3H)-Benzofuranone, 3-[4-(acetyloxy)-3,5-dimethylphenyl]-5,7-bis(1,1-dimethylethyl)- (CA INDEX NAME)  
OTHER NAMES:  
CN 3-(4-Acetoxy-3,5-dimethylphenyl)-5,7-di-tert-butylbenzofuran-2-one  
MF C26 H32 O4  
SR CA  
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

5 REFERENCES IN FILE CA (1907 TO DATE)  
5 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 145:104487

REFERENCE 2: 141:70644

REFERENCE 3: 137:263786

REFERENCE 4: 137:79675

REFERENCE 5: 121:36913

L7 ANSWER 6 OF 10 REGISTRY COPYRIGHT 2008 ACS on STN

RN 155794-36-8 REGISTRY

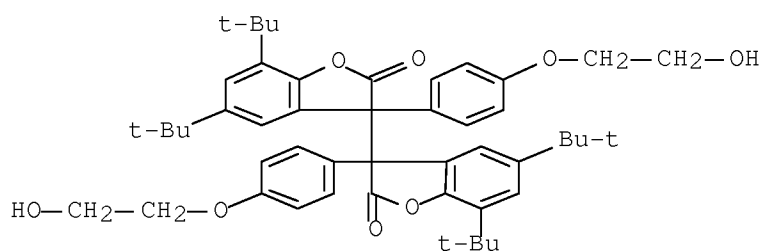
ED Entered STN: 17 Jun 1994

CN [3,3'-Bibenzofuran]-2,2'-(3H,3'H)-dione, 5,5',7,7'-tetrakis(1,1-dimethylethyl)-3,3'-bis[4-(2-hydroxyethoxy)phenyl]- (CA INDEX NAME)

MF C48 H58 O8

SR CA

LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

3 REFERENCES IN FILE CA (1907 TO DATE)  
3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

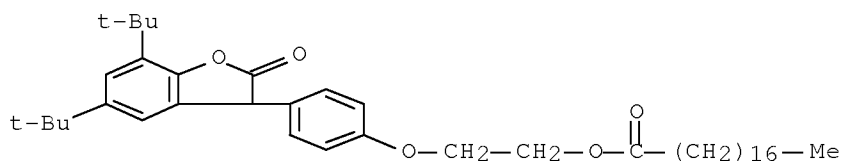
REFERENCE 1: 141:70644

REFERENCE 2: 137:79675

REFERENCE 3: 121:35314

L7 ANSWER 7 OF 10 REGISTRY COPYRIGHT 2008 ACS on STN

RN 155794-08-4 REGISTRY  
ED Entered STN: 17 Jun 1994  
CN Octadecanoic acid, 2-[4-[5,7-bis(1,1-dimethylethyl)-2,3-dihydro-2-oxo-3-benzofuranyl]phenoxy]ethyl ester (CA INDEX NAME)  
OTHER NAMES:  
CN 5,7-Di-tert-butyl-3-[4-(2-stearoyloxyethoxy)phenyl]benzofuran-2-one  
MF C42 H64 O5  
SR CA  
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL

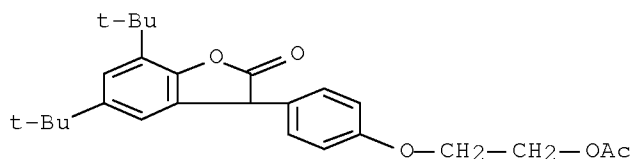


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7 REFERENCES IN FILE CA (1907 TO DATE)  
7 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 145:104487  
REFERENCE 2: 141:70644  
REFERENCE 3: 137:263786  
REFERENCE 4: 137:79675  
REFERENCE 5: 129:190510  
REFERENCE 6: 128:116258  
REFERENCE 7: 121:35314

L7 ANSWER 8 OF 10 REGISTRY COPYRIGHT 2008 ACS on STN  
RN 155794-02-8 REGISTRY  
ED Entered STN: 17 Jun 1994  
CN 2(3H)-Benzofuranone, 3-[4-[2-(acetyloxy)ethoxy]phenyl]-5,7-bis(1,1-dimethylethyl)- (CA INDEX NAME)  
OTHER NAMES:  
CN 3-[4-(2-Acetoxyethoxy)phenyl]-5,7-di-tert-butylbenzofuran-2-one  
CN PS 675  
MF C26 H32 O5  
SR CA  
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL

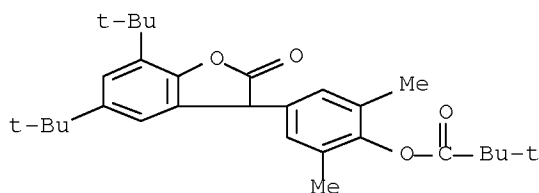


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

11 REFERENCES IN FILE CA (1907 TO DATE)  
11 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 145:104487  
REFERENCE 2: 141:70644  
REFERENCE 3: 137:263786  
REFERENCE 4: 137:79675  
REFERENCE 5: 129:331553  
REFERENCE 6: 129:190510  
REFERENCE 7: 128:116258  
REFERENCE 8: 126:331493  
REFERENCE 9: 126:306116  
REFERENCE 10: 123:256501

L7 ANSWER 9 OF 10 REGISTRY COPYRIGHT 2008 ACS on STN  
RN 150046-35-8 REGISTRY  
ED Entered STN: 16 Sep 1993  
CN Propanoic acid, 2,2-dimethyl-, 4-[5,7-bis(1,1-dimethylethyl)-2,3-dihydro-2-oxo-3-benzofuranyl]-2,6-dimethylphenyl ester (CA INDEX NAME)  
OTHER NAMES:  
CN 3-(3,5-Dimethyl-4-pivaloyloxyphenyl)-5,7-di-tert-butylbenzofuran-2-one  
MF C29 H38 O4  
SR CA  
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



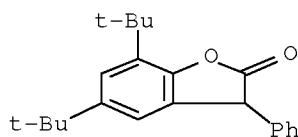
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

9 REFERENCES IN FILE CA (1907 TO DATE)  
9 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 145:104487  
REFERENCE 2: 141:70644  
REFERENCE 3: 137:263786

REFERENCE 4: 137:79675  
 REFERENCE 5: 132:315779  
 REFERENCE 6: 129:190510  
 REFERENCE 7: 128:116258  
 REFERENCE 8: 121:36913  
 REFERENCE 9: 119:141129

L7 ANSWER 10 OF 10 REGISTRY COPYRIGHT 2008 ACS on STN  
 RN ~~66737-86-8~~ REGISTRY  
 ED Entered STN: 16 Nov 1984  
 CN 2(3H)-Benzofuranone, 5,7-bis(1,1-dimethylethyl)-3-phenyl- (CA INDEX NAME)  
 OTHER NAMES:  
 CN 5,7-Di-tert-butyl-3-phenyl-2-coumaranone  
 CN 5,7-Di-tert-butyl-3-phenyl-3H-benzofuran-2-one  
 MF C22 H26 O2  
 LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT, CHEMLIST, USPAT2, USPATFULL  
 (\*File contains numerically searchable property data)  
 Other Sources: EINECS\*\*  
 (\*\*Enter CHEMLIST File for up-to-date regulatory information)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

44 REFERENCES IN FILE CA (1907 TO DATE)  
 2 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 44 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 148:178963  
 REFERENCE 2: 147:551368  
 REFERENCE 3: 147:437021  
 REFERENCE 4: 146:423000  
 REFERENCE 5: 146:411157  
 REFERENCE 6: 146:143468  
 REFERENCE 7: 146:82624  
 REFERENCE 8: 144:293642  
 REFERENCE 9: 144:273841



REFERENCE 10: 142:57336

=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 16:22:24 ON 18 MAR 2008

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FILE COVERS 1907 - 18 Mar 2008 VOL 148 ISS 12

FILE LAST UPDATED: 17 Mar 2008 (20080317/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

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L37 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2004:534284 HCAPLUS Full-text

DN 141:70644

ED Entered STN: 02 Jul 2004

TI Antioxidant arylbenzofuranones and other substances for edible fats, oils and foods and feeds containing these materials.

IN Seltzer, Raymond; Ravichandran, Ramasathan

PA Ciba Specialty Chemicals Holding Inc., Switz.

SO PCT Int. Appl., 47 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C11B0005-00

CC 17-9 (Food and Feed Chemistry)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004055141	A2	20040701	WO 2003-EP50954	20031208 <--
	WO 2004055141	A3	20041209		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
	RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
	AU 2003302176	A1	20040709	AU 2003-302176	20031208 <--

EP 1571928	A2	20050914	EP 2003-809982	20031208 <--
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CN 1726026	A	20060125	CN 2003-80106496	20031208 <--
BR 2003017474	A	20060207	BR 2003-17474	20031208 <--
JP 2006510362	T	20060330	JP 2004-560500	20031208 <--
US 2006051478	A1	20060309	US 2005-538891	20050614 <--
MX 2005PA06544	A	20050816	MX 2005-PA6544	20050617 <--
IN 2005CN01591	A	20070907	IN 2005-CN1591	20050712 <--
PRAI US 2002-434715P	P	20021218	<--	
WO 2003-EP50954	W	20031208	<--	

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2004055141	ICM	C11B0005-00
	IPCI	C11B0005-00 [ICM,7]
	IPCR	A23K0003-00 [I,C*]; A23K0003-00 [I,A]; A23L0003-3463 [I,C*]; A23L0003-3499 [I,A]; A23L0003-3544 [I,A]; C11B0005-00 [I,C*]; C11B0005-00 [I,A]
	ECLA	A23K003/00; A23L003/3499; A23L003/3544; C11B005/00S
AU 2003302176	IPCI	C11B0005-00 [ICM,7]
	IPCR	A23K0003-00 [I,C*]; A23K0003-00 [I,A]; A23L0003-3463 [I,C*]; A23L0003-3499 [I,A]; A23L0003-3544 [I,A]; C11B0005-00 [I,C*]; C11B0005-00 [I,A]
EP 1571928	IPCI	A23L0003-34 [ICM,7]; A23K0001-16 [ICS,7]; C11B0005-00 [ICS,7]; A23D0009-00 [ICS,7]
	IPCR	A23K0003-00 [I,C*]; A23K0003-00 [I,A]; A23L0003-3463 [I,C*]; A23L0003-3499 [I,A]; A23L0003-3544 [I,A]; C11B0005-00 [I,C*]; C11B0005-00 [I,A]
	ECLA	A23K003/00; A23L003/3499; A23L003/3544; C11B005/00S
CN 1726026	IPCI	A61K0031-34 [I,A]; C07D0307-77 [I,A]; C07D0307-00 [I,C*]
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	ECLA	A23K003/00; A23L003/3499; A23L003/3544; C11B005/00S
BR 2003017474	IPCI	C11B0005-00 [ICS,7]
	IPCR	A23K0003-00 [I,C*]; A23L0003-3463 [I,C*]; C11B0005-00 [I,C*]; A23K0003-00 [I,A]; A23L0003-3499 [I,A]; A23L0003-3544 [I,A]; C11B0005-00 [I,A]
	ECLA	A23K003/00; A23L003/3499; A23L003/3544; C11B005/00S
JP 2006510362	IPCI	A23D0009-06 [I,A]; A23K0001-16 [I,A]; A23K0001-18 [I,A]; A23L0003-3544 [I,A]; A23L0003-3463 [I,C*]; C09K0015-06 [I,A]; C09K0015-18 [I,A]; C09K0015-26 [I,A]; C09K0015-00 [I,C*]; C11B0005-00 [I,A]
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US 2006051478 IPCI A23D0009-013 [I,A]; A23D0009-007 [I,C\*] <--  
 IPCR A23D0009-007 [I,C]; A23D0009-013 [I,A] <--  
 NCL 426/531.000  
 ECLA K23V

MX 2005PA06544 IPCI A23D0009-00 [ICM,7]; A23K0001-16 [ICS,7]; A23L0003-34  
 [ICS,7]; A23L0003-35 [ICS,7]; A23L0003-3508 [ICS,7];  
 A23L0003-3463 [ICS,7,C\*]; C11B0005-00 [ICS,7] <--

IN 2005CN01591 IPCI A23L0003-34 [ICM,7] <--

OS MARPAT 141:70644

AB A combination of one or more compds. selected from the group consisting of 3-  
 arylbenzofuranones, long chain N,N-dialkylhydroxylamines, substituted  
 hydroxylamines, nitrones, and amine oxides is highly effective as an  
 antioxidant for use with edible organic substances subject to deterioration by  
 oxidation

ST antioxidant arylbenzofuranone dialkylhydroxylamine hydroxylamine nitrone  
 fat oil feed food

IT Antioxidants  
 Coloring materials  
 Emulsifying agents  
 Feed additives  
 Food preservatives  
 Oxidation  
 (antioxidant arylbenzofuranones and other substances for edible fats,  
 oils and foods and feeds containing these materials)

IT Corn oil  
 Edible oils  
 Fats and Glyceridic oils, biological studies  
 RL: BSU (Biological study, unclassified); FFD (Food or feed use); BIOL  
 (Biological study); USES (Uses)  
 (antioxidant arylbenzofuranones and other substances for edible fats,  
 oils and foods and feeds containing these materials)

IT Amine oxides  
 Nitrones  
 Phosphites  
 Tocopherols  
 RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)  
 (antioxidant arylbenzofuranones and other substances for edible fats,  
 oils and foods and feeds containing these materials)

IT Alcohols, biological studies  
 RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)  
 (antioxidant esters containing; antioxidant arylbenzofuranones and other  
 substances for edible fats, oils and foods and feeds containing these  
 materials)

IT Rosmarinus officinalis  
 (extract; antioxidant arylbenzofuranones and other substances for edible  
 fats, oils and foods and feeds containing these materials)

IT Food  
 (fatty; antioxidant arylbenzofuranones and other substances for edible  
 fats, oils and foods and feeds containing these materials)

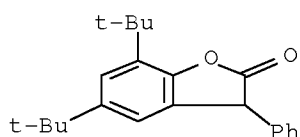
IT Glycerides, biological studies  
 RL: BSU (Biological study, unclassified); BIOL (Biological study)  
 (foods and feeds containing; antioxidant arylbenzofuranones and other  
 substances for edible fats, oils and foods and feeds containing these  
 materials)

IT Feed  
 (pet; antioxidant arylbenzofuranones and other substances for edible  
 fats, oils and foods and feeds containing these materials)

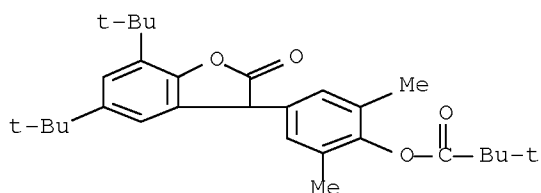
IT Alcohols, biological studies  
 RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)  
 (polyhydric, antioxidant esters containing; antioxidant arylbenzofuranones

and other substances for edible fats, oils and foods and feeds containing these materials)

- IT Amine oxides  
RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)  
(tertiary; antioxidant arylbenzofuranones and other substances for edible fats, oils and foods and feeds containing these materials)
- IT 50-81-7, Vitamin C, biological studies 128-37-0, BHT, biological studies 1611-03-6D, 3,5-Di-tert-butyl-4-hydroxyphenylacetic acid, esters 1948-33-0, TBHQ 3376-26-9, N-Benzyl- $\alpha$ -phenylnitron 6881-57-8D, Benzyl phosphonic acid, derivs. 7803-49-8D, Hydroxylamine, N,N-di(hydrogenated tallow) derivs. 7803-49-8D, Hydroxylamine, long-chain N,N-dialkyl- and other substituted derivs. 20170-32-5D,  $\beta$ -(3,5-Di-tert-butyl-4-hydroxyphenyl)propionic acid, esters 22606-42-4D, tallow derivs. 24794-55-6D, esters 25013-16-5, BHA 49801-05-0D, di(C12-C14) derivs. 66737-86-8 70524-55-9, N-Ethyl- $\alpha$ -methylnitron 111783-83-6D, Benzofuranone, 3-aryl derivs. 137359-61-6, O-Allyl-N,N-diocetadecyl hydroxylamine 150046-35-8 155794-02-8 155794-08-4 155794-36-8 155810-89-2 155811-15-7 164391-52-0 169198-26-9 243655-78-9D, esters 339529-04-3, N-Octyl- $\alpha$ -heptylnitron 439945-17-2, N-Lauryl- $\alpha$ -undecylnitron 439945-19-4, N-Tetradecyl- $\alpha$ -tridecylnitron 439945-20-7, N-Hexadecyl- $\alpha$ -pentadecylnitron 439945-21-8, N-Hexadecyl- $\alpha$ -heptadecylnitron 439945-23-0, N-Heptadecyl- $\alpha$ -heptadecylnitron 439945-24-1, n-Octadecyl- $\alpha$ -hexadecylnitron 439945-25-2, N-Methyl- $\alpha$ -heptadecylnitron 454168-41-3, O-n-Propyl-N,N-diocetadecyl hydroxylamine 713110-38-4  
RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)  
(antioxidant arylbenzofuranones and other substances for edible fats, oils and foods and feeds containing these materials)
- IT 123250-74-8, Irgastab FS-042 201815-03-4, Irganox HP-136  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(antioxidant arylbenzofuranones and other substances for edible fats, oils and foods and feeds containing these materials)
- IT 66737-86-8 150046-35-8 155794-02-8 155794-08-4 155794-36-8 155810-89-2 155811-15-7 164391-52-0 169198-26-9  
RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)  
(antioxidant arylbenzofuranones and other substances for edible fats, oils and foods and feeds containing these materials)
- RN 66737-86-8 HCAPLUS  
CN 2(3H)-Benzofuranone, 5,7-bis(1,1-dimethylethyl)-3-phenyl- (CA INDEX NAME)

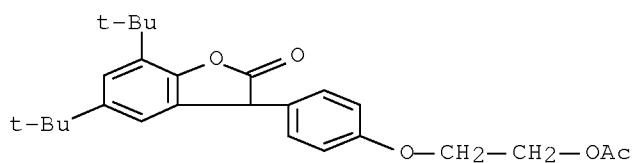


- RN 150046-35-8 HCAPLUS  
CN Propanoic acid, 2,2-dimethyl-, 4-[5,7-bis(1,1-dimethylethyl)-2,3-dihydro-2-oxo-3-benzofuranyl]-2,6-dimethylphenyl ester (CA INDEX NAME)



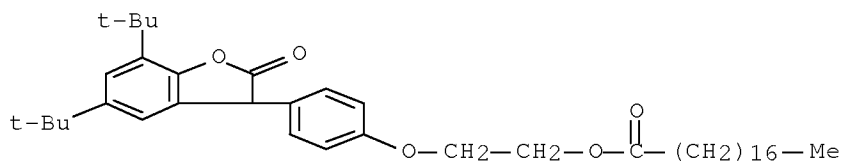
RN 155794-02-8 HCAPLUS

CN 2(3H)-Benzofuranone, 3-[4-[2-(acetyloxy)ethoxy]phenyl]-5,7-bis(1,1-dimethylethyl)- (CA INDEX NAME)



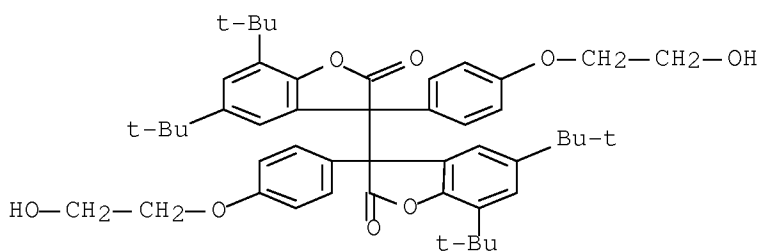
RN 155794-08-4 HCAPLUS

CN Octadecanoic acid, 2-[4-[5,7-bis(1,1-dimethylethyl)-2,3-dihydro-2-oxo-3-benzofuranyl]phenoxy]ethyl ester (CA INDEX NAME)



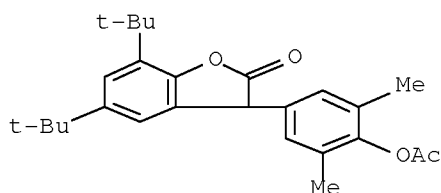
RN 155794-36-8 HCAPLUS

CN [3,3'-Bibenzofuran]-2,2'-(3H,3'H)-dione, 5,5',7,7'-tetrakis(1,1-dimethylethyl)-3,3'-bis[4-(2-hydroxyethoxy)phenyl]- (CA INDEX NAME)



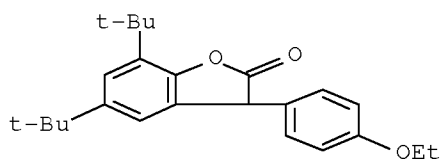
RN 155810-89-2 HCAPLUS

CN 2(3H)-Benzofuranone, 3-[4-(acetyloxy)-3,5-dimethylphenyl]-5,7-bis(1,1-dimethylethyl)- (CA INDEX NAME)



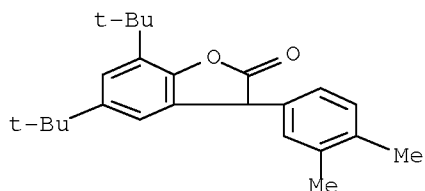
RN 155811-15-7 HCAPLUS

CN 2(3H)-Benzofuranone, 5,7-bis(1,1-dimethylethyl)-3-(4-ethoxyphenyl)- (CA INDEX NAME)



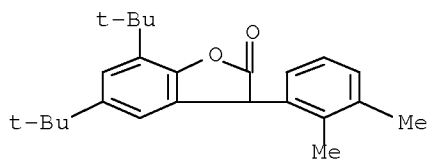
RN 164391-52-0 HCAPLUS

CN 2(3H)-Benzofuranone, 5,7-bis(1,1-dimethylethyl)-3-(3,4-dimethylphenyl)- (CA INDEX NAME)



RN 169198-26-9 HCAPLUS

CN 2(3H)-Benzofuranone, 5,7-bis(1,1-dimethylethyl)-3-(2,3-dimethylphenyl)- (CA INDEX NAME)



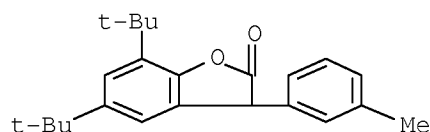
IT 201815-03-4, Irganox HP-136

RL: RCT (Reactant); RACT (Reactant or reagent)

(antioxidant arylbenzofuranones and other substances for edible fats, oils and foods and feeds containing these materials)

RN 201815-03-4 HCAPLUS

CN 2(3H)-Benzofuranone, 5,7-bis(1,1-dimethylethyl)-3-[2,3(or 3,4)-dimethylphenyl]- (CA INDEX NAME)



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L38 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2004:1125652 HCAPLUS Full-text

DN 142:57786

TI Modified poly(ethylene terephthalate) (PET) with less aldehydes and manufacture thereof

IN Mamyoda, Takahiro; Hiraoka, Shoji

PA Mitsui Chemicals Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004359907	A	20041224	JP 2003-162946	20030606 <--
PRAI	JP 2003-162946		20030606	<--	

AB Melt PET (A), prepared by esterification of terephthalic acid and ethylene glycol and subsequent condensation polymerization in melt state, are blended with melt additives (B) chosen from hindered phenols, lactones, and/or P-based stabilizers and granulated to give chip-like modified PET, showing no acetaldehyde odor and useful for beverage bottles. After the granulation, the modified PET may be annealed at temperature lower than m.p. to increase intrinsic viscosity. Thus, ethylene glycol, isophthalic acid, and terephthalic acid were esterified and polymerized to give polyester. Part of the polyester was mixed with pentaerythritol tetrakis[3-(3,5-di-tert-butyl-4-hydroxyphenyl) propionate] (Irganox 1010) to give a master batch, which was melt blended with the residue of the polyester, cut into chips, crystallized, solid polymerized, and molded to give a bottle showing acetaldehyde concentration 7.2 ppm.

IC ICM C08J0003-20

ICS C08K0005-13; C08K0005-151; C08K0005-49; C08L0067-02

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 17

IT 6683-19-8, Irganox 1010 31570-04-4, Irgafos 168 164391-52-0,

5,7-Di-tert-butyl-3-(3,4-dimethylphenyl)-3H-benzofuran-2-one

RL: FFD (Food or feed use); MOA (Modifier or additive use); PEP

(Physical, engineering or chemical process); PYP (Physical process); BIOL (Biological study); PROC (Process); USES (Uses)

(stabilizers; manufacture of aldehyde odor-free modified PET for beverage bottles by blending with stabilizers)

IT 164391-52-0, 5,7-Di-tert-butyl-3-(3,4-dimethylphenyl)-3H-benzofuran-2-one

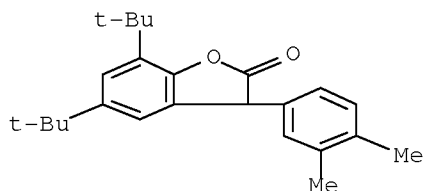
RL: FFD (Food or feed use); MOA (Modifier or additive use); PEP

(Physical, engineering or chemical process); PYP (Physical process); BIOL (Biological study); PROC (Process); USES (Uses)

(stabilizers; manufacture of aldehyde odor-free modified PET for beverage bottles by blending with stabilizers)

RN 164391-52-0 HCAPLUS

CN 2(3H)-Benzofuranone, 5,7-bis(1,1-dimethylethyl)-3-(3,4-dimethylphenyl)-  
(CA INDEX NAME)



L38 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:559904 HCAPLUS Full-text

DN 139:118387

TI Rubber-modified styrene polymer compositions with good mold releasability and their injection-blow-molded products

IN Kawasaki, Toshiharu; Miura, Shinichi

PA PS Japan K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003206384	A	20030722	JP 2002-7544	20020116 <--
PRAI	JP 2002-7544		20020116	<--	
OS	MARPAT 139:118387				

AB The compns., useful for food containers, etc., comprise (a) 100 parts styrene polymers containing dispersed rubber particles, (b) 0.006-0.5 part 3-R1-substituted 4-7-R2-R5-substituted benzofuranone [R1 = (un)substituted (hetero)cyclic aromatic group; R2-R5 = H, C1-5 alkyl], and (c) 0.02-0.5 part higher fatty acid metal salts and higher fatty acids. Thus, a composition containing (a) 100 parts styrene polymer containing 4.5% Diene 55 (rubber particle, average particle size 3.4 μm), (b) 0.05 part 5,7-di-tert-butyl-3-(3,4-dimethylphenyl)-3H-benzofuran-2-one, (c) 0.2 part calcium stearate, and (d) 0.1 part stearic acid was injection-blow-molded to give a container for milk with improved continuous moldability and reduced black foreign matters.

IC ICM C08L0051-04

ICS B29C0049-00; C08J0005-00; C08K0005-09; C08K0005-098; C08K0005-1535; B29K0021-00; B29K0055-02; B29K0105-16

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 17, 27, 39

IT 164391-51-9P 164391-52-0P, 5,7-Di-tert-butyl-3-(3,4-dimethylphenyl)-3H-benzofuran-2-one

RL: FFD (Food or feed use); IMF (Industrial manufacture); MOA

(Modifier or additive use); TEM (Technical or engineered material use);

BIOL (Biological study); PREP (Preparation); USES (Uses)

(heat stabilizer; preparation of heat stabilizers for rubber-modified styrene polymer compns.)

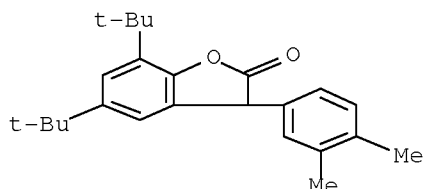
IT 164391-52-0P, 5,7-Di-tert-butyl-3-(3,4-dimethylphenyl)-3H-benzofuran-2-one



RL: FFD (Food or feed use); IMF (Industrial manufacture); MOA  
(Modifier or additive use); TEM (Technical or engineered material use);  
BIOL (Biological study); PREP (Preparation); USES (Uses)  
(heat stabilizer; preparation of heat stabilizers for rubber-modified  
styrene polymer compns.)

RN 164391-52-0 HCAPLUS

CN 2(3H)-Benzofuranone, 5,7-bis(1,1-dimethylethyl)-3-(3,4-dimethylphenyl)-  
(CA INDEX NAME)



L38 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:736320 HCAPLUS Full-text

DN 137:263786

TI Synergistic flame retardant compositions for polymers

IN Troutman, Malisa V.; Ravichandran, Ramanathan; Srinivsan,  
Rangarajan; King, Roswell Easton; Horsey, Douglas Wayne

PA Ciba Specialty Chemicals Holding Inc., Switz.

SO PCT Int. Appl., 70 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 2002074847	A1	20020926	WO 2002-EP2706	20020312 <--	
	W:			AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW		
	RW:			GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG		
	CA 2440904	A1	20020926	CA 2002-2440904	20020312 <--	
	AU 2002302417	A1	20021003	AU 2002-302417	20020312 <--	
	EP 1379584	A1	20040114	EP 2002-729995	20020312 <--	
	EP 1379584	B1	20050824			
	R:			AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR		
	CN 1498244	A	20040519	CN 2002-807076	20020312 <--	
	JP 2004526837	T	20040902	JP 2002-573849	20020312 <--	
	AT 302814	T	20050915	AT 2002-729995	20020312 <--	
	ES 2247332	T3	20060301	ES 2002-729995	20020312 <--	
	US 2004097619	A1	20040520	US 2003-471947	20030916 <--	
	US 7084196	B2	20060801			
	IN 2003CN01475	A	20051125	IN 2003-CN1475	20030918 <--	
	US 2006084731	A1	20060420	US 2005-296686	20051207 <--	
PRAI	US 2001-277222P	P	20010320	<--		

WO 2002-EP2706 W 20020312 <--  
 US 2003-471947 A1 20030916 <--

OS MARPAT 137:263786

AB Polymeric substrates, for example polyolefins such as polypropylene, can be made flame retardant by the incorporation therein of a synergistic mixture of (i.) at least one compound selected from the group consisting of nitroxyl stabilizers, hydroxylamine stabilizers, nitron stabilizers, substituted hydroxylamine stabilizers, amine oxide stabilizers, benzofuranone stabilizers, phosphite and phosphonite stabilizers, quinone methide stabilizers and monoacrylate esters of 2,2'-alkylidenebisphenol stabilizers and (iii.) at least one compound selected from the group consisting of brominated flame retardants, phosphorus containing flame retardants and inorg. flame retardants such as ammonium polyphosphate or decabromodiphenyl oxide; wherein the amount of organic or inorg. flame retardant of component (ii.) required to achieve an acceptable level of flame retardancy is significantly reduced compared to that needed when component (i. ) is not present.

IC ICM C08K0005-00

ICS C08K0005-3435

CC 37-6 (Plastics Manufacture and Processing)

IT 2226-96-2, 4-Hydroxy-1-oxyl-2,2,6,6-tetramethylpiperidine 2516-88-3,  
 Bis( 1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)succinate 2516-91-8,  
 Bis(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl) terephthalate 2564-83-2  
 2564-88-7 2896-70-0 3225-26-1, 1-Oxyl-2,2,6,6-tetramethylpiperidin-4-  
 yl benzoate 3229-53-6 3376-26-9, N-Benzyl- $\alpha$ -phenylnitron  
 3551-21-1, Bis(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl) isophthalate  
 3936-30-9, Bis( 1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)phthalate  
 4359-97-1 6599-87-7 7019-94-5 7062-57-9 7078-98-0 7803-49-8D,  
 Hydroxylamine, derivs. 14691-89-5 22977-67-9 40289-91-6 61167-58-6  
 65559-25-3 70524-55-9, N-Ethyl- $\alpha$ -methylnitron 71711-98-3  
 77432-44-1, 4,4'-Ethylenebis( 1-oxyl-2,2,6,6-tetramethylpiperazin-3-one)  
 86878-55-9 86878-57-1 94271-84-8, N-(1-Oxyl-2,2,6,6-  
 tetramethylpiperidin-4-yl)caprolactam 97116-04-6 104056-68-0  
 123373-68-2 128893-72-1 132207-24-0, 1-Oxyl-2,2,6,6-  
 tetramethylpiperidin-4-yl 4-tert-butyl-benzoate 132392-95-1  
 150046-35-8 153784-60-2, 1-Oxyl-2,2,6,6-tetramethylpiperidin-4-  
 yl 2-ethylhexanoate 153784-61-3, Bis(1-oxyl-2,2,6,6-tetramethylpiperidin-  
 4-yl) n-butylmalonate 153784-62-4, Bis( 1-oxyl-2,2,6,6-  
 tetramethylpiperidin-4-yl)hexahydroterephthalate 154186-11-5  
 155794-02-8 155794-06-2 155794-08-4  
 155810-89-2 155811-15-7 164391-52-0  
 169198-26-9 179552-47-7 179552-48-8, 2,4,6-Tris-[N-butyl-N-(1-  
 oxyl-2,2,6,6-tetramethylpiperidin-4-yl)]-s-triazine 183666-73-1  
 183666-75-3 183666-77-5 183666-79-7 183666-82-2 183721-31-5  
 183721-32-6 183721-33-7 183721-34-8 183721-35-9 183721-36-0  
 339529-04-3, N-Octyl- $\alpha$ -heptylnitron 433337-81-6 439945-17-2,  
 N-Lauryl- $\alpha$ -undecylnitron 439945-19-4, N-Tetradecyl- $\alpha$ -  
 tridecylnitron 439945-20-7, N-Hexadecyl- $\alpha$ -pentadecylnitron  
 439945-21-8, N-Hexadecyl- $\alpha$ -heptadecylnitron 439945-22-9,  
 N-Octadecyl- $\alpha$ -pentadecylnitron 439945-23-0, N-Heptadecyl- $\alpha$ -  
 heptadecylnitron 439945-24-1 439945-25-2 461664-14-2 461664-15-3  
 461664-16-4 461664-17-5 461664-18-6 461664-19-7 461664-20-0  
 461664-21-1 461664-37-9

RL: MOA (Modifier or additive use); USES (Uses)

(synergistic flame retardant compns. for polymers)

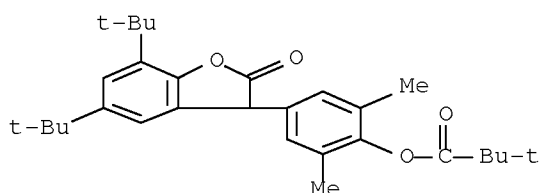
IT 150046-35-8 155794-02-8 155794-08-4  
 155810-89-2 155811-15-7 164391-52-0  
 169198-26-9

RL: MOA (Modifier or additive use); USES (Uses)

(synergistic flame retardant compns. for polymers)

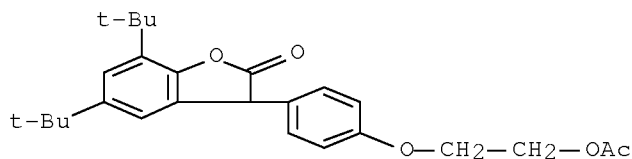
RN 150046-35-8 HCAPLUS

CN Propanoic acid, 2,2-dimethyl-, 4-[5,7-bis(1,1-dimethylethyl)-2,3-dihydro-2-oxo-3-benzofuranyl]-2,6-dimethylphenyl ester (CA INDEX NAME)



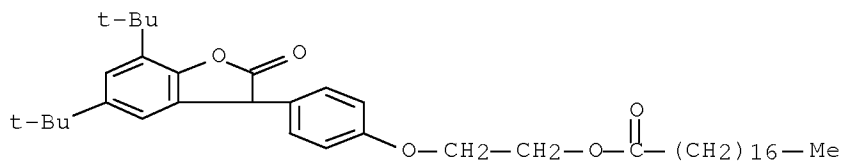
RN 155794-02-8 HCAPLUS

CN 2(3H)-Benzofuranone, 3-[4-[2-(acetyloxy)ethoxy]phenyl]-5,7-bis(1,1-dimethylethyl)- (CA INDEX NAME)



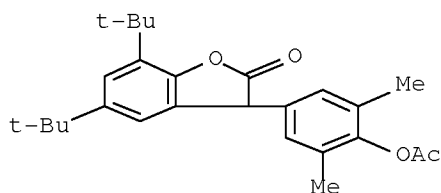
RN 155794-08-4 HCAPLUS

CN Octadecanoic acid, 2-[4-[5,7-bis(1,1-dimethylethyl)-2,3-dihydro-2-oxo-3-benzofuranyl]phenoxy]ethyl ester (CA INDEX NAME)



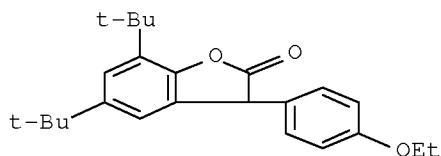
RN 155810-89-2 HCAPLUS

CN 2(3H)-Benzofuranone, 3-[4-(acetyloxy)-3,5-dimethylphenyl]-5,7-bis(1,1-dimethylethyl)- (CA INDEX NAME)

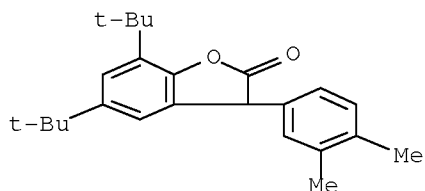


RN 155811-15-7 HCAPLUS

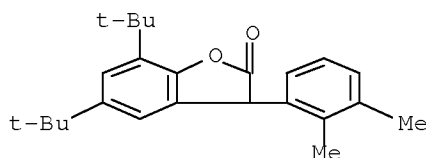
CN 2(3H)-Benzofuranone, 5,7-bis(1,1-dimethylethyl)-3-(4-ethoxyphenyl)- (CA INDEX NAME)



RN 164391-52-0 HCAPLUS

CN 2(3H)-Benzofuranone, 5,7-bis(1,1-dimethylethyl)-3-(3,4-dimethylphenyl)-  
(CA INDEX NAME)

RN 169198-26-9 HCAPLUS

CN 2(3H)-Benzofuranone, 5,7-bis(1,1-dimethylethyl)-3-(2,3-dimethylphenyl)-  
(CA INDEX NAME)

## RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Ciba Geigy Ag	1998			WO 9828361 A	HCAPLUS
Ciba Geigy Ag	1999			WO 9900450 A	HCAPLUS
Nesvadba, P	1994			US 5369159 A	HCAPLUS
Sicken, M	1994			US 5326805 A	HCAPLUS

L38 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2001:573337 HCAPLUS Full-text

DN 135:138199

TI 4-Methyl-1-pentene polymer compositions with good heat resistance and  
flexibility

IN Nakahara, Takashi

PA Mitsui Chemicals Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.

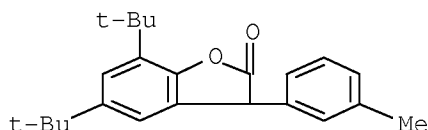
KIND

DATE

APPLICATION NO.

DATE

PI JP 2001214015 A 20010807 JP 2000-22613 20000131 <--  
 PRAI JP 2000-22613 20000131 <--  
 OS MARPAT 135:138199  
 AB The compns., useful for food packaging materials, contain 4-methyl-1-pentene polymers and phenol acrylates and/or lactones scavenging alkyl radicals. A composition comprising a mixture of 4-methyl-1-pentene-1-tetradecene copolymer (I) 70, HV 300 (liquid polybutene) 10, 1-butene-ethylene copolymer 10, propylene-ethylene copolymer 10 parts, 0.10% (to I) Sumilizer GS, 0.15% (to I) Irganox 1010, and 2.0% (to I) zeolite was made into a film showing haze 2.0%, gloss 85%, and no odor after heating at 100° for 30 min.  
 IC ICM C08L0023-20  
 ICS C08K0003-00; C08K0005-00; C08K0005-134; C08K0005-1535  
 CC 37-6 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 17  
 IT Food packaging materials  
 (4-Methyl-1-pentene polymer compns. with good heat resistance for)  
 IT 123968-25-2, Sumilizer GS 201815-03-4, HP 136  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (4-Methyl-1-pentene polymer compns. with good heat resistance)  
 IT 201815-03-4, HP 136  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (4-Methyl-1-pentene polymer compns. with good heat resistance)  
 RN 201815-03-4 HCAPLUS  
 CN 2(3H)-Benzofuranone, 5,7-bis(1,1-dimethylethyl)-3-[2,3(or 3,4)-dimethylphenyl]- (CA INDEX NAME)



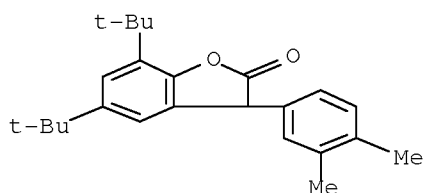
D1-Me

L38 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2000:236136 HCAPLUS Full-text  
 DN 132:252335  
 TI Thermal-stable conjugated diene polymer compositions with low unpleasant odor  
 IN Yanagihara, Hiroshi; Iihara, Tomohiro  
 PA Asahi Chemical Industry Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000103906	A	20000411	JP 1998-275591	19980929 <--
PRAI	JP 1998-275591		19980929	<--	
AB	Title compns., useful for food packagings, comprise 0.05-3 phr (based on 100 parts polymers) S-free hindered phenol antioxidants, 0.01-0.5 phr S-containing antioxidants (A), and 0.5-10% (based on 100 parts A) epoxides. A composition of 30:70 butadiene-styrene block copolymer 100, octadecyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate 0.25, 2,4-bis(n-octylthiomethyl)-6-				

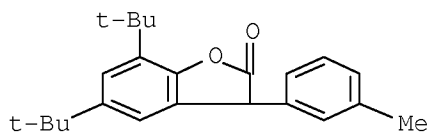
methylphenol 0.2, and epoxidized soya oil 0.01 part showed melt flow retention 83% (230°, 2.16-kg load, 55 min, based on 5 min residence time), low unpleasant odor, and 100° n-heptane-eluted content 230 mg.

- IC ICM C08L0009-00  
ICS C08K0005-13; C08K0005-15; C08K0005-36  
CC 39-15 (Synthetic Elastomers and Natural Rubber)  
Section cross-reference(s): 17, 38  
IT Antioxidants  
Food packaging materials  
Heat-resistant materials  
(epoxide- and antioxidant blend-containing conjugated diene rubbers with thermal stability and odor reduction for food packagings)  
IT 90-66-4 123-28-4, Dilauryl 3,3'-thiodipropionate 693-36-7, Distearyl 3,3'-thiodipropionate 1709-70-2, 1,3,5-Trimethyl-2,4,6-tris(3,5-di-tert-butyl-4-hydroxybenzyl)benzene 2082-79-3, Octadecyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate 6683-19-8 16545-54-3, Dimyristyl 3,3'-thiodipropionate 29598-76-3, Pentaerythritol tetrakis(3-laurylthiopropionate) 31851-03-3, Wingstay L 35074-77-2 36443-68-2 41484-35-9 61167-58-6, 2-tert-Butyl-6-(3-tert-butyl-2-hydroxy-5-methylbenzyl)-4-methylphenyl acrylate 90498-90-1 110553-27-0 123968-25-2, 2-[1-(2-Hydroxy-3,5-di-tert-pentylphenyl)ethyl]-4,6-di-tert-pentylphenyl acrylate 146598-26-7, Isooctyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate 164391-52-0, 5,7-Di-tert-butyl-3-(3,4-dimethylphenyl)-3H-benzofuran-2-one 188793-84-2, Wingstay K  
RL: MOA (Modifier or additive use); USES (Uses)  
(antioxidant; epoxide- and antioxidant blend-containing conjugated diene rubbers with thermal stability and odor reduction for food packagings)  
IT 164391-52-0, 5,7-Di-tert-butyl-3-(3,4-dimethylphenyl)-3H-benzofuran-2-one  
RL: MOA (Modifier or additive use); USES (Uses)  
(antioxidant; epoxide- and antioxidant blend-containing conjugated diene rubbers with thermal stability and odor reduction for food packagings)  
RN 164391-52-0 HCAPLUS  
CN 2(3H)-Benzofuranone, 5,7-bis(1,1-dimethylethyl)-3-(3,4-dimethylphenyl)-  
(CA INDEX NAME)



- L38 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 1999:751590 HCAPLUS Full-text  
DN 131:352367  
TI Oxygen remover-containing polyolefin compositions and their sheets, films, laminates, and packaging containers  
IN Otaki, Ryoji; Kashiba, Takashi; Ito, Yoshiki  
PA Mitsubishi Gas Chemical Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11323032	A	19991126	JP 1999-14544	19990122 <--
	JP 3460801	B2	20031027		
PRAI	JP 1998-12908	A	19980126	<--	
AB	The compns., especially useful for food packaging films and containers, contain 10-80:20-90 mixts. of O removers and polyolefins, and 10-20,000 ppm phenolic, P-, and/or lactone-type antioxidants. Thus, pellets containing 40 parts O remover (Fe powder coated with CaCl <sub>2</sub> and NaCl), 60 parts polyethylene (PE) (Novatec LD-LC 720), and 21 ppm a phenolic antioxidant (ADK Stab AO 50) were extrusion-laminated with PET, PE, and an Al foil to give a multilayer film. Rice cakes sealed in a bag from the film were not deteriorated after 1-mo storage at 25°.				
IC	ICM C08L0023-00				
ICS	A23L0003-00; A23L0003-3436; B01J0020-26; B01J0020-28; B32B0007-02; B65D0081-26; C08K0003-08; C08K0003-16; C08K0005-10; C08K0005-13; C08K0005-49				
CC	38-3 (Plastics Fabrication and Uses) Section cross-reference(s): 17				
IT	Antioxidants Bags Food packaging materials Laminated plastic films (polyolefin films containing O removers and antioxidants for (laminated) food packaging containers)				
IT	201815-03-4, HP 136 RL: FFD (Food or feed use); MOA (Modifier or additive use); BIOL (Biological study); USES (Uses) (HP 136; polyolefin films containing O removers and antioxidants for (laminated) food packaging containers)				
IT	201815-03-4, HP 136 RL: FFD (Food or feed use); MOA (Modifier or additive use); BIOL (Biological study); USES (Uses) (HP 136; polyolefin films containing O removers and antioxidants for (laminated) food packaging containers)				
RN	201815-03-4 HCAPLUS				
CN	2(3H)-Benzofuranone, 5,7-bis(1,1-dimethylethyl)-3-[2,3(or 3,4)-dimethylphenyl]- (CA INDEX NAME)				



D1-Me

L38 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1994:435314 HCAPLUS Full-text  
 DN 121:35314  
 TI Preparation of 3-(2-acyloxyethoxyphenyl)benzofuran-2-ones as stabilizers for organic materials.  
 IN Nesvadba, Peter  
 PA Ciba-Geigy A.-G., Switz.  
 SO Eur. Pat. Appl., 50 pp.

CODEN: EPXXDW

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 591102	A1	19940406	EP 1993-810651	19930914 <--
	EP 591102	B1	20001018		
	R: AT, BE, DE, ES, FR, GB, IT, NL, SE				
	AT 197048	T	20001115	AT 1993-810651	19930914 <--
	ES 2151900	T3	20010116	ES 1993-810651	19930914 <--
	US 5428162	A	19950627	US 1993-124139	19930920 <--
	CA 2106607	A1	19940324	CA 1993-2106607	19930921 <--
	RU 2130931	C1	19990527	RU 1993-55138	19930921 <--
	SK 282160	B6	20011106	SK 1993-1017	19930921 <--
	CZ 289204	B6	20011212	CZ 1993-1961	19930921 <--
	ZA 9307014	A	19940323	ZA 1993-7014	19930922 <--
	CN 1087906	A	19940615	CN 1993-117880	19930922 <--
	CN 1040208	B	19981014		
	BR 9303878	A	19940329	BR 1993-3878	19930923 <--
	JP 06207041	A	19940726	JP 1993-261564	19930924 <--
	JP 3505604	B2	20040308		
PRAI	CH 1992-2979	A	19920923	<--	
OS	MARPAT 121:35314				
GI					

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Title compds. [I; when m = 1, R1 = H, (O-, S-, or imino-interrupted) (phosphonate-substituted) alkanoyl, alkenoyl, cycloalkylcarbonyl, thenoyl, furoyl, (alkyl-substituted) PhCO, Q1, Q2, Q3, COR21COR11, COR22R23; when m = 2, R1 = CO, COR21CO, COR22R24R22CO; when m = 3, R1 = alkanetricarbonyl, aryltricarbonyl, Q4, Q5; when m = 4, R1 = alkanetetracarbonyl, aryltetracarbonyl; R2-R5 = H, Cl, alkyl, phenylalkyl, (substituted) Ph, cycloalkyl, alkoxy, alkylthio, OH, alkylamino, dialkylamino, alkanoyloxy, alkanoylamino, alkenoyloxy, etc.; R2R3, R3R4, R4R5 = atoms to form Ph rings; R6 = H, Q6; R7-R10 = H, alkyl, alkoxy; R11 = OH, metal alkoxide, alkoxy, amino; R17, R19, R20 = H, alkyl; R18 = H, (substituted) Ph, phenylalkyl, (O-, S-, or imino-interrupted) alkyl, etc.; R21 = bond, (O-, S-, or imino-interrupted) alkylene, alkenylene, cycloalkylene, bicycloalkylene (alkyl)phenylene, etc.; R22 = O, imino, etc.; R23 = alkyl, Ph; R24 = alkylene, cycloalkylene, phenylene; m = 1-4; n = 0-2], were prepared Thus, 2,4-di-tert-butylphenol and 4-(2-hydroxyethoxy)mandelic acid (preparation given) were refluxed 8 h in HOAc saturated with HCl gas; the HOAc was removed in vacuo and the residue was heated at 120° with AcCl. Volatiles were again removed in vacuo and the residue was kept in MeOH at -8° to precipitate 3-[4-(2-acetoxyethoxy)phenyl]-5,7-di-tert-butylbenzofuran-2-one. The latter at 0.015% in a polypropylene composition gave a melting index after 3 extrusions of 6.1, vs. 17.1 for untreated controls.

IC ICM C07D0307-83

ICS C07C0059-64; C08K0005-15

CC 27-6 (Heterocyclic Compounds (One Hetero Atom))

Section cross-reference(s): 37

IT	155794-02-8P	155794-03-9P	155794-04-0P	155794-05-1P	
	155794-06-2P	155794-07-3P	155794-08-4P	155794-09-5P	
	155794-10-8P	155794-11-9P	155794-12-0P	155794-13-1P	155794-14-2P
	155794-15-3P	155794-16-4P	155794-17-5P	155794-18-6P	155794-19-7P



155794-20-0P 155794-21-1P 155794-22-2P 155794-23-3P 155794-24-4P  
 155794-25-5P 155794-26-6P 155794-27-7P 155794-28-8P 155794-29-9P  
 155794-30-2P 155794-31-3P 155794-32-4P 155794-33-5P 155794-34-6P  
 155794-35-7P 155794-36-8P 155794-37-9P 155794-38-0P  
 155794-39-1P 155794-40-4P 155794-41-5P 155794-42-6P 155794-43-7P  
 155794-44-8P 155794-45-9P

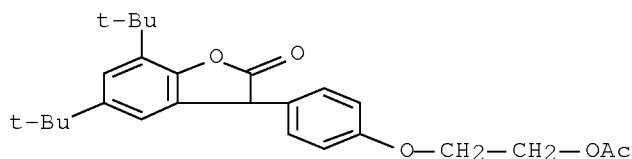
RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, as stabilizer for organic materials)

IT 155794-02-8P 155794-08-4P 155794-36-8P

RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, as stabilizer for organic materials)

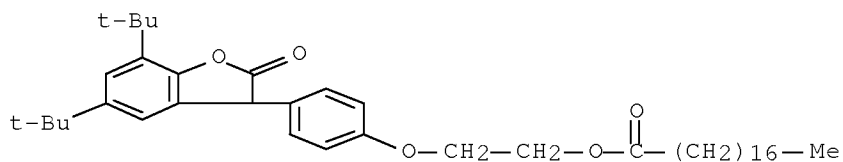
RN 155794-02-8 HCAPLUS

CN 2(3H)-Benzofuranone, 3-[4-[2-(acetyloxy)ethoxy]phenyl]-5,7-bis(1,1-dimethylethyl)- (CA INDEX NAME)



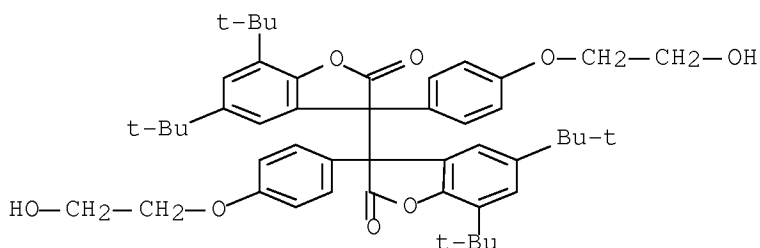
RN 155794-08-4 HCAPLUS

CN Octadecanoic acid, 2-[4-[5,7-bis(1,1-dimethylethyl)-2,3-dihydro-2-oxo-3-benzofuranyl]phenoxy]ethyl ester (CA INDEX NAME)



RN 155794-36-8 HCAPLUS

CN [3,3'-Bibenzofuran]-2,2'-(3H,3'H)-dione, 5,5',7,7'-tetrakis(1,1-dimethylethyl)-3,3'-bis[4-(2-hydroxyethoxy)phenyl]- (CA INDEX NAME)



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(FILE 'HOME' ENTERED AT 15:53:25 ON 18 MAR 2008)  
 SET COST OFF

FILE 'HCAPLUS' ENTERED AT 15:53:38 ON 18 MAR 2008

L1 1 S US20060051478/PN OR (US2005-538891# OR WO2003-EP50954)/AP,PRN  
E SELTZER/AU  
E SELTZER R/AU  
L2 89 S E3,E4,E6  
E RAVICHANDRAN/AU  
L3 136 S E63,E66  
E RAMANATHAN/AU  
E RAMANATHAN R/AU  
L4 121 S E3-E5  
SEL RN L1

FILE 'REGISTRY' ENTERED AT 15:55:52 ON 18 MAR 2008

L5 37 S E1-E37  
L6 11 S L5 AND OC4-C6/ES  
L7 10 S L6 AND 46.150.18/RID  
SAV L7 DEES538/A

FILE 'HCAPLUS' ENTERED AT 16:04:08 ON 18 MAR 2008

L8 246 S L7  
L9 30 S L8 AND PY<=2003 NOT P/DT  
L10 27 S L8 AND PY<=2002 NOT P/DT  
L11 134 S L8 AND (PD<=20021218 OR PRD<=20021218 OR AD<=20021208) AND P/  
L12 147 S L8 AND (PD<=20031208 OR PRD<=20031208 OR AD<=20031208) AND P/  
L13 177 S L9,L12  
L14 161 S L10,L11  
L15 6 S L13,L14 AND (FOOD? OR FEED?)/SC,SX  
L16 2 S L13,L14 AND C11B005/IPC,IC,ICM,ICS,EPC  
L17 4 S L13,L14 AND (FEED? OR FOOD?)/CW,CT  
E FEED/CT  
L18 1 S L13,L14 AND E8+OLD,NT  
L19 1 S L13,L14 AND E3+OLD,NT  
E FOOD/CT  
L20 1 S L13 AND E37+OLD,NT  
L21 1 S L14 AND E37+OLD,NT  
L22 4 S L13,L14 AND L7(L)FFD/RL  
L23 2 S L1-L4 AND L8  
L24 58 S L8 AND CIBA?/CO,PA,CS  
L25 52 S L13,L14 AND L24  
L26 3 S L15-L23 AND L24,L25  
L27 8 S L15-L23,L26  
L28 5 S L27 NOT PACKAGING  
L29 1 S L28 NOT PLASTIC?/SC,SX  
L30 7 S L27 NOT L29  
L31 2 S L13,L14 AND A23?/IPC,IC,ICM,ICS,EPC  
L32 1 S L31 NOT PACKAGING  
L33 1 S L29,L32  
L34 7 S L30,L31 NOT L33  
L35 1 S L13,L14 AND A61K/IPC,IC,ICM,ICS,EPC  
L36 1 S L33,L35  
L37 1 S L36 AND L1-L4,L8-L36  
L38 7 S L27-L36 AND L1-L4,L8-L36 NOT L37

FILE 'REGISTRY' ENTERED AT 16:22:12 ON 18 MAR 2008

FILE 'HCAPLUS' ENTERED AT 16:22:24 ON 18 MAR 2008

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